

Space systems — Safety and compatibility of materials —

Part 2: Determination of flammability of electrical-wire insulation and accessory materials

ICS 13.220.40; 49.025.01; 49.140

National foreword

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The UK participation in its preparation was entrusted to Technical Committee ACE/68, Space systems and operations, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Summary of pages

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Space systems — Safety and compatibility of materials —

Part 2:

Determination of flammability of electrical-wire insulation and accessory materials

Systèmes spatiaux — Sécurité et compatibilité des matériaux —

*Partie 2: Détermination de l'inflammabilité des systèmes d'isolation des
fils électriques, et des matériaux accessoires*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14624-2 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

ISO 14624 consists of the following parts, under the general title *Space systems — Safety and compatibility of materials*:

- *Part 1: Determination of upward flammability of materials*
- *Part 2: Determination of flammability of electrical-wire insulation and accessory materials*
- *Part 3: Determination of offgassed products from materials and assembled articles*
- *Part 4: Determination of upward flammability of materials in pressurized gaseous oxygen or oxygen-enriched environments*
- *Part 5: Determination of reactivity of materials with aerospace propellants*
- *Part 6: Determination of reactivity of processing materials with aerospace fluids*
- *Part 7: Determination of permeability of materials to aerospace fluids*

Introduction

Throughout this part of ISO 14624, the minimum essential criteria are identified by the use of the imperative or the key word “shall”. Recommended criteria are identified by the use of the key word “should” and, while not mandatory, are considered to be of primary importance in providing serviceable, economical and practical designs. Deviations from the recommended criteria may be made only after careful consideration, extensive testing and thorough service evaluation have shown an alternative method to be satisfactory.

Space systems — Safety and compatibility of materials —

Part 2:

Determination of flammability of electrical-wire insulation and accessory materials

1 Scope

This part of ISO 14624 specifies two test methods for determining the flammability of electrical-wire insulation and accessory materials by exposure to an external ignition source in a static environment (Test A) and in a gas-flow environment (Test B).

2 Conformance

The tests shall be performed in an accredited test facility (see Annex A for guidelines).

The authority having jurisdiction, or the test requester, shall provide properly identified material(s) for testing. Alternatively, accredited test facilities may be authorized by the test requester to procure the appropriate material(s).

3 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 14624-1, *Space systems — Safety and compatibility of materials — Part 1: Determination of upward flammability of materials*

4 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

4.1

burn length

maximum distance over which the insulation has been damaged due to flame impingement

NOTE This distance includes areas of partial or complete combustion, charring or embrittlement, but does not include areas which are sooted, stained, warped or discoloured, or areas where the insulation has shrunk or melted away from the heat.

4.2

self-extinguishing

phenomenon wherein the burn length of a wire insulation system is less than 150 mm when exposed to an external ignition source

4.3

transfer of burning debris

movement of burning particles from a burning specimen to adjacent materials